

App. No. 09/696,866
Amendment Dated February 21, 2006
Reply to Office Action of November 21, 2005

REMARKS/ARGUMENTS

Claim 1 - 28 are pending in the present application. Claims 1 - 11 were provisionally elected in response to a prior restriction requirement. Claims 1 - 7, 9 and 11 are rejected under 35 U.S.C. § 102(b). Claims 8 and 10 are rejected under 35 U.S.C. § 103(a). Claims 1 - 3 are amended. Claim 5 is cancelled. No new matter is entered.

Rejection Under 35 U.S.C. § 102(b)

Claims 1 - 7, 9 and 11 are rejected under 35 U.S.C. § 102(b) as being anticipated by Dunnebacke (U.S. Patent No. 5,729,174), hereinafter simply the '174 reference. Applicant has amended claims 1- 3 and cancelled claim 5, since substantially similar limitation to claim 5 are now found in amended claims 1. Claim 1 as amended recites at least the following limitations that are not described, taught, or otherwise found in the cited references of record:

" ... a first amplifier and a second amplifier are arranged to ... for driving a load of a first type coupled there between, and a third amplifier and a fourth amplifier ... for driving another load of the first type coupled there between;

"... the first and second amplifiers are arranged ... for driving a load of a second type coupled there between, wherein the first type is different from the second type, and the second amplifier and the third amplifier ... for driving another load of the second type coupled there between;

"a control circuit that automatically determines the type of loads coupled to the amplified A and B channel signals and automatically employs the determined load type to select an arrangement of the amplifiers..."; and

"a switch that is arranged to: couple the first output to an input of the second amplifier when in a closed position, and disconnect the first output from the input of the second amplifier when in an open position, wherein the switch is selectively controlled by the control circuit such

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that the switch is closed when the selected arrangement of the amplifiers is the first configuration, and the switch is open when the selected arrangement is the second configuration."

With respect to claim 1, the Office Action states that the '174 reference teaches to "drive each determined load type (11, 12)". Loads 11 and 12 in the '174 reference are not different load types at all, and instead are a pair of matched load types (see e.g. col. 4 line 30 through column 6, line 12, where elements 11 and 12 are referred to as loud speakers that with a nominal impedance of 8 ohms). Applicant's amended claim 1 recites "the first type is different from the second type" to clarify a point that was already inherent in the original claim, but now literally recited for the utmost clarity.

Claim 1 has also been amended to include limitations that are substantially similar to claim 5. With respect to claim 5, the Office Action stated that the '174 reference teaches that "a third switch (9) ... couples the first output to an input of the second amplifier (3) when in a closed position, and disconnects the first output from the input of the second amplifier when in an open position ...". Applicant respectfully disagrees with this position for the following reasons, referring to FIG. 2 of the '174 reference.

Amplifier 2 has a single input port that is connected to terminal 6, and a single output port that is connected to terminal 13. Amplifier 3 in the '174 reference has a single input port that is connected to terminal 6, and a single output port that is connected to an input of switch 9. Amplifier 4 has a single input port that is connected to switch 8, and a single output port that is connected to terminal 15. Amplifier 5 has a single input port that is connected to terminal 7, and a single output port that is connected to terminal 16. The operation of switch 9 connected the output of amplifier 3 to terminal 14, which is an output port for connecting speaker 11. Notice however that terminals none of the terminals indicated as terminals 13 - 16 are connected to any of the inputs of amplifier 2 - 5. The first output that is described in Applicant's claim 1 is described as "a first output of the first amplifier". As such, the operation of switch 9 from the '174 reference does not meet all of the limitations that are found in Applicant's amended claim 1.

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For at least the reasons stated above, claim 1 is believed to be in proper form for allowance and notice to that effect is kindly requested.

With regards to claims 2 - 3, the '174 reference fails to teach all of the limitations of claim 1, from which they depend. Claims 2 - 3 have been amended, not to overcome any basis of rejection but to clarify that which was already described in those claims.

Claims 2 as amended recites: "a ... mechanical switch ... wherein the control circuit automatically determines the type of load to be of the first type when the first mechanical switch is detected as closed, and of the second type when the first mechanical switch is detected as open." Similarly, claim 3 as amended recites "a mechanical switch ... wherein the control circuit detects the type of load by detecting the disposition of the second mechanical switch as the open position or the closed position."

Claims 2 and 3 both require that their "control circuit" automatically determines, or detects, the status of a mechanical switch as open or closed. Notice that logic circuit 28 in the '174 reference does not detect the state of switches 8 and 10 as open or closed. Instead logic circuit 28 controls the switches so it already knows what state they are in without any sensing necessary. As such, it is believed that the limitations and other operations taught in Applicant's claims 2 and 3 are not found in the '174 reference either literally or inferentially, and as such Applicant's request the rejection of claims 2 and 3 be withdrawn.

With regards to claim 4, the '174 reference fails to teach all of the limitations of claim 1, from which it depends. Moreover, claim 4 recites: "... the fourth amplifier includes a tri-state input that is coupled to the control circuit ...". Nothing in the '174 reference describes, teaches, or otherwise suggests that any of the amplifiers (2 - 5) of the '174 reference have a tri-state input terminal. Moreover, logic circuit 28 does not have an output signal that is connected to any of the amplifiers as an input signal. For at least the reasons stated above, Applicant respectfully requests that the rejection of claim 4 be withdrawn, and notice to that effect be provided.

With respect to claims 9 and 11, the office action states that the "first, second, and the third amplifier inherently include a controllable current limit output that is enabled in the selected arrangement is the second configuration (see col. 4 line 31 - col. 5 line 24); and the

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control circuit (see fig. 1 (26-28)) further comprises a short circuit detector, the short circuit detector determines that a short circuit condition exists when the second output is maintained below the reference voltage for a predetermined time interval, and the control circuit inherently (because, switch 9 and 10 are circuit breakers) disables the second amplifier ..." Applicant does hereby seasonably request that the Examiner provide a reference that supports this conclusion. A review of columns 4 - 6 of the '174 reference does not admit of a short circuit detection circuit, nor does it admit that there is any notion of a predetermined time interval within the scope of the Applicant's claims 9 and 11. The claim of inherency is not supported by the text of the specification and is only provided with aid of hindsight reconstruction. For example, where in the specification and the figures is there any discussion of predetermined time intervals? The fact that the circuits of the '174 reference could be fashioned to provide similar functionality does not dispense with the requirement that each element be provided in the reference. The description of the '174 reference merely eludes to the fact that the impedance measuring circuits can measure loads of around 8 ohms, and detect loads of around 100Kohms. Moreover, there is no description that provides for any dynamic control of a "controlled current limit", which is only found in Applicants claims. As such, it is requested that either a reference be provided, or the rejection of claims 9 and 11 be withdrawn.

Claims 2 - 4 and 6 - 11 depend from and further limit claim 1, and are believed to be allowable for at least those reasons stated above, as well as any additional limitations they recite. Claims 1 - 5 and 6 - 11 are believed to be in proper form for allowance and notice to that effect is respectfully requested.

Rejection Under 35 U.S.C. § 103(a)

Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the '174 reference in view of Mizukami (US Patent No. 6,059,960), hereinafter the '960 reference.

Applicant's agree that the '174 reference fails to teach a control circuit, as is found in Applicant's claim 8, that is adapted for detection a disposition of a jack having a mechanical switch.

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Moreover, Applicant believes that the configuration found in Applicant's amended claim 1 where the various amplifiers are selectively configured into one of two configurations, and where the status of the plug insertion is used to change the amplifier configurations as is found in Applicant's claim 8 is also not shown in the '174 reference. Moreover, it is proposed that claim 1 is allowable for the reasons stated previously. For at least those reasons stated with regards to claim 1, as well as the additional limitations presented in claim 8, is believed that the combination of the '174 reference and the '690 reference does not present a prima facie case of obviousness, and withdrawal of the rejection is requested. As a minor note, there is no suggestion or motivation found in either of the references that an externally provided jack should be used to provide the configuration features that are found in Applicant's claim 8.

Claim 10 is rejected under 35 U.S.C. § 103(a) as being unpatentable over the '174 reference in view of Kusakabe (US Patent No. 6,107,886), hereinafter the '886 reference. Applicant's agree that the '174 reference fails to teach "each of the controllable current limited outputs of the first, second, and third amplifiers includes an output transistor that generates an output current in response to a drive signal, and a controlled clamp that is arranged to clamp the drive signal when the selected arrangement is the second configuration." Moreover, Applicant has carefully reviewed the '886 reference and cannot identify support for the assertion that "the Kusakabe teaches ... a controlled clamp that is arranged to clamp the drive signal when the selected arrangement is the second configuration". Reviewing col. 4, lines 1 - col. 5, line 67 and beyond has not provided further illumination as to the controlled clamp arrangement that is provided in Applicant's claim 10. The additional bridge amplifiers that are provided in the '886 reference are arranged to provide additional headroom for improved efficiency. In other words,

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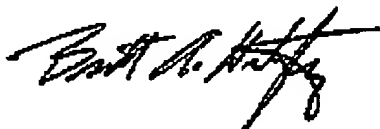
additional amplifiers are activated when the signal demand higher-power, and the additional amplifiers are deactivated when lower power is demanded. This is the opposite of a clamp operation, where the signal is limited in headroom intentionally. As such, it appears that the '886 reference teaches away from the claimed invention of Applicant's claim 10, and thus a prima facie case of obviousness has not been shown. As such, a notice of allowance is requested for claim 10.

Claims 8 and 10 also depend upon and further limit Applicant's independent claim 1, and should be allowable for that reason as well as any additional limitations they recite.

In view of the foregoing amendments and remarks, all pending claims are believed to be allowable and the application is in condition for allowance. Therefore, a Notice of Allowance is respectfully requested. Should the Examiner have any further issues regarding this application, the Examiner is requested to contact the undersigned attorney for the applicant at the telephone number provided below.

Respectfully submitted,

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